

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

BRIDGESTONE SPORTS CO., LTD.)	
and BRIDGESTONE GOLF, INC.,)	
)	
Plaintiffs,)	C.A. No. 05-132 (JJF)
)	
v.)	REDACTED –
)	PUBLIC VERSION
ACUSHNET COMPANY,)	
)	
Defendant.)	

**BRIDGESTONE’S ANSWERING BRIEF IN OPPOSITION TO
ACUSHNET’S MOTION FOR SUMMARY JUDGMENT OF
NON-INFRINGEMENT OF U.S. PATENT NO. 5,252,652**

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NATURE AND STAGE OF THE PROCEEDINGS

This is a patent infringement action brought by Plaintiffs Bridgestone Sports Co., Ltd. and Bridgestone Golf, Inc. (collectively “Bridgestone”) against Defendant Acushnet Company (“Acushnet”) in March 2005. Bridgestone accuses various Acushnet golf balls of infringing claims of seven patents, including U.S. Patent No. 5,252,652 (“the ‘652 patent”), which is titled “Solid Golf Ball” (D.I. 374, Ex. 1, ‘652 patent).

This is Bridgestone’s Answering Brief in Opposition to Acushnet’s Motion for Summary Judgment of Non-Infringement of the ‘652 patent.

SUMMARY OF ARGUMENT

Acushnet asserts that it “does not literally infringe claim 1 of the ‘652 patent because its accused products lack one of the following two claim limitations: ‘about 0.05 to about 2 parts by weight of a sulfur compound’ and ‘about 25 to about 40 parts by weight of a zinc or magnesium salt of an unsaturated fatty acid having 3 to 4 carbon atoms’” (D.I. 373 at 2). Bridgestone’s expert has opined that the accused Acushnet golf balls literally infringe the ‘652 patent. Acushnet cannot simply ignore that expert testimony to seek summary judgment. This is, in fact, a classic jury issue.

Moreover, even if there were no literal infringement, there is infringement under the doctrine of equivalents. Bridgestone is entitled to a scope of equivalents and to rebut any presumption of estoppel under *Festo* because its amendment during prosecution did not change the claimed ranges.

Finally, Bridgestone properly disclosed its infringement contentions to Acushnet during discovery.

STATEMENT OF FACTS

A. The '652 Patent And The Asserted Claims

The '652 patent issued on October 12, 1993, based on an application filed in Japan in May 1989. The '652 patent relates to golf balls having improved flying performance. The organic sulfur compound (or metal salt thereof) that the inventors used in the golf ball core is a key, novel ingredient that improved the ball's performance, including its rebound properties and initial velocity. The '652 patent identifies several types of organic sulfur compounds that may be used to obtain this performance benefit, and states a preference for zinc pentachlorothiophenol ("zinc PCTP"). Acushnet uses zinc PCTP for the same reasons and in the very same manner as first taught by the '652 patent back in 1989.¹

Bridgestone asserts claims 1, 5 and 9 of the '652 patent. Claim 1, the only asserted independent claim, reads:

1. A solid golf ball, having an improved rebound property and initial velocity, comprising a rubber composition containing 100 parts by weight of a base rubber selected from the group consisting of polybutadiene rubber, natural rubber, polyisoprene rubber and styrene-butadiene rubber, about 25 to about 40 parts by weight of a zinc or magnesium salt of an unsaturated fatty acid having 3 to 8 carbon atoms, about 0.05 to about 2 parts by weight of a sulfur compound selected from the group consisting of pentachlorothiophenol, 4-t-butyl-o-thiocresol [*sic*], 4-t-butyl-p-thiocresol, 2-benzamidothiophenol, thiobenzoic

¹ Acushnet says that golf ball patents are a "crowded art," but fails to cite a single patent that predates the '652 patent. Instead, Acushnet cites later patents (*e.g.*, the '716 patent from 2003, the '968 patent from 1997 and the '791 patent from 2004 (*see* D.I. 373 at 12-13)), and tries to use these later-filed patents to inform how the claim term "about" in the '652 patent should be applied.

acid, and zinc salts thereof, and about 0.5 to about 3 parts by weight of an organic peroxide.

Claims 5 and 9 depend indirectly from claim 1. None of the additional limitations of those claims are at issue on this motion.

Bridgestone has accused the Pro V1, Pro V1x, Pro V1*(star), NXT, NXT Tour, DT SoLo, PT SoLo, and Pinnacle Exception golf balls of infringing claims 1, 5 and 9 of the '652 patent. It is undisputed that each of these accused Acushnet golf balls includes a core made from a rubber composition having at least a base rubber, a zinc salt of an unsaturated fatty acid, an organosulfur compound and an organic peroxide, all of which are the exact ingredients set forth in claim 1 of the '652 patent.

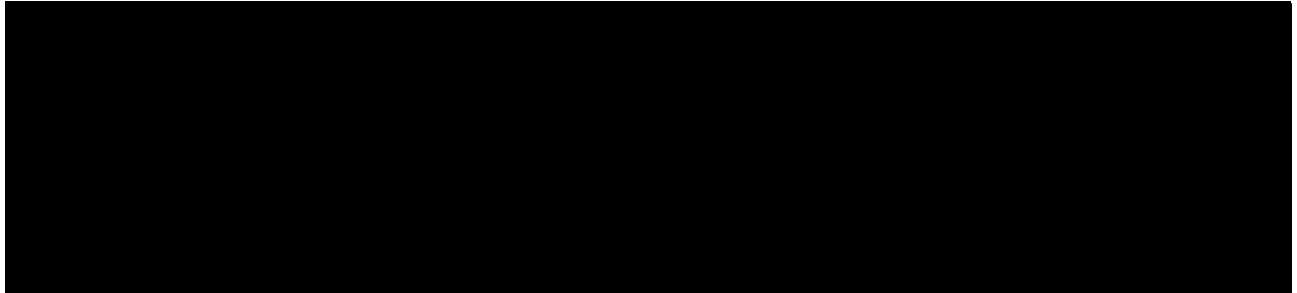
B. Manufacturing Guidelines

There is a factual dispute between the parties about whether it is appropriate to look to the Manufacturing Guidelines as containing the core recipes for the accused golf balls to determine infringement (*see* the discussion in Bridgestone's Answering Brief in Opposition to Acushnet's Motion for Summary Judgment of Non-infringement of the '961 Patent, filed concurrently herewith). For purposes of this motion, however, "Acushnet adopts Mr. Cadorniga's infringement methodology of using the [sic] strictly the manufacturing guidelines" (D.I. 373 at 17). Nevertheless, as set forth below, Acushnet argues that Bridgestone's expert's calculations of the amounts of certain core materials such as ZDA and zinc PCTP from the Manufacturing Guidelines are incorrect, and that Acushnet's own, different calculations allegedly show non-infringement.

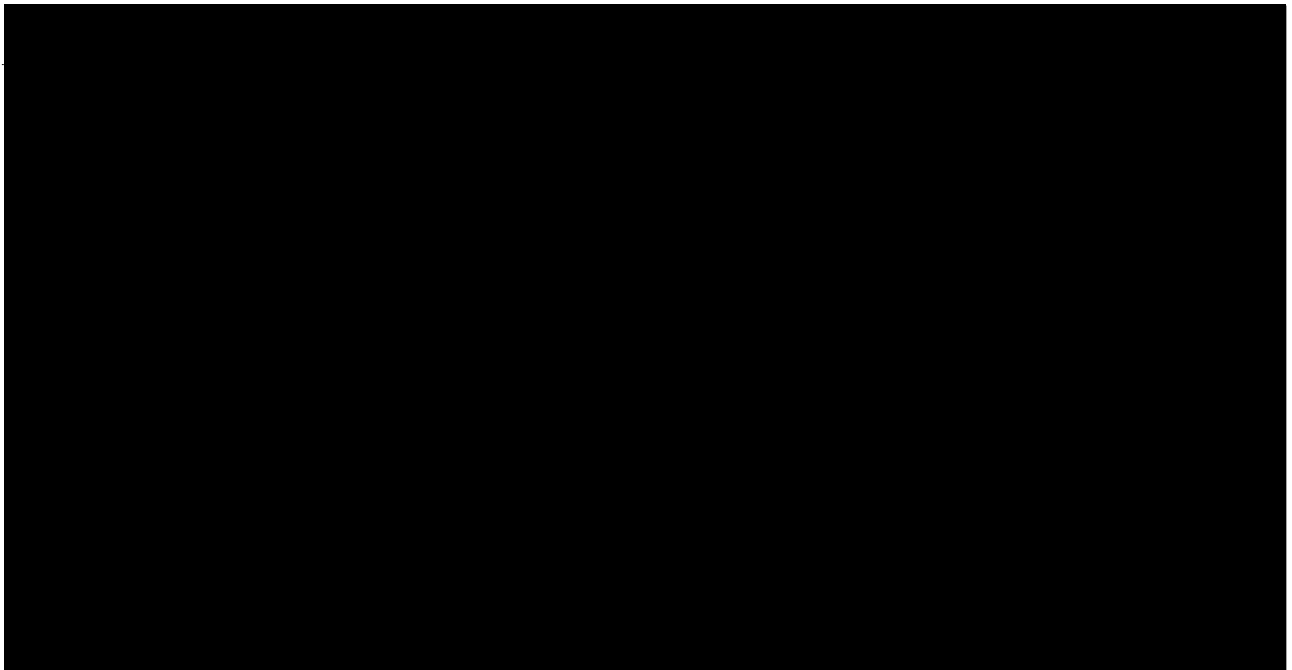
C. Acushnet's Purity Levels of ZDA and Zinc PCTP

Although Acushnet says that it does not dispute the use of its own Manufacturing Guidelines to determine infringement, it does dispute the purity levels of ZDA and zinc PCTP reflected in the Guidelines (D.I. 373 at 16-19). Bridgestone's expert, Mr. Cadorniga, relied upon Acushnet's Manufacturing Guidelines, raw material data sheets, and his own personal knowledge. Rather than accept those amounts for purposes of this motion, Acushnet "recalculated" them to argue non-infringement (D.I. 373 at 18-20).

1. ZDA



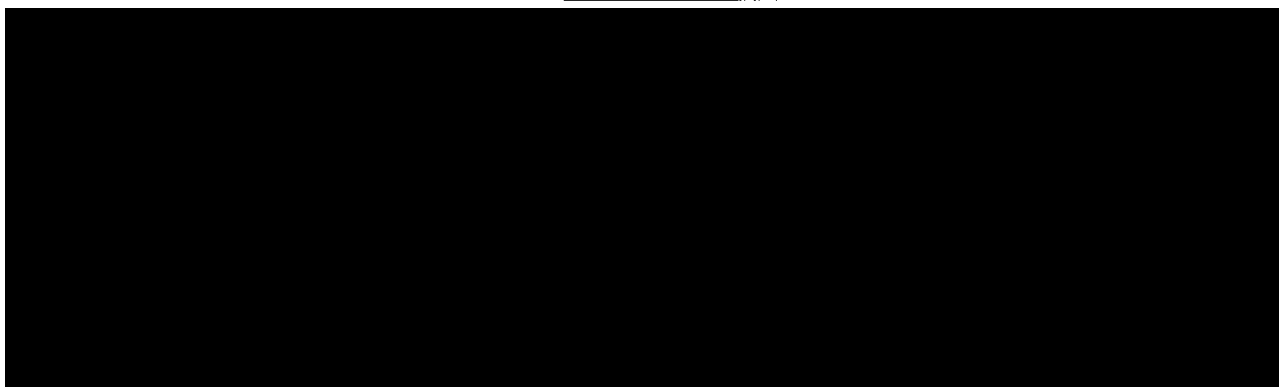
a. Bridgestone's Evidence



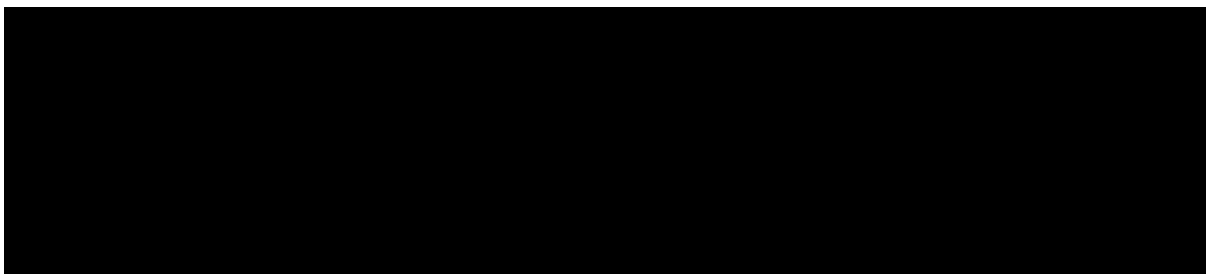
5.

Mr. Cadorniga is very familiar with Sartomer's ZDA because of his work for various golf ball companies over the past 30 years. He knew Sartomer's ZDA to be 100% pure ZDA (Ex. 2, Cadorniga Declaration of April 26, 2007, at ¶¶ 7-10). Thus, he opined that the purity level of the ZDA powder used in Acushnet's accused golf balls was 100% pure, free of contaminants.

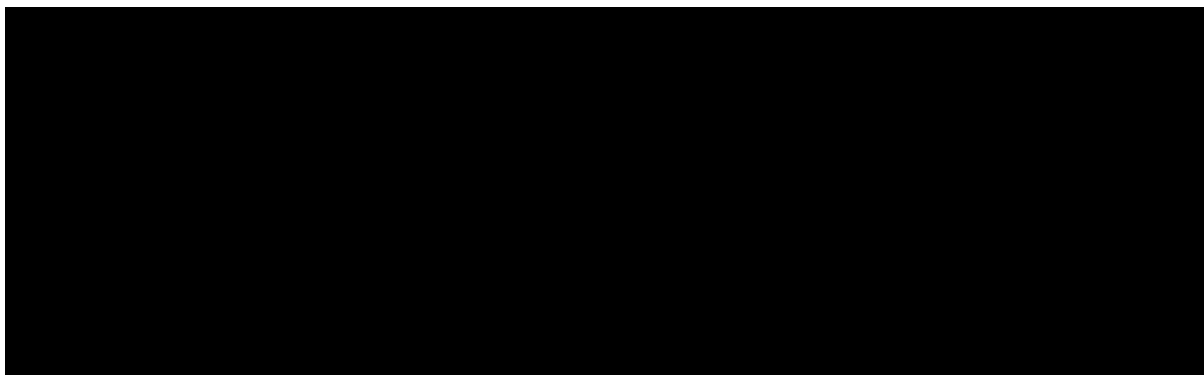
b. Acushnet's Evidence

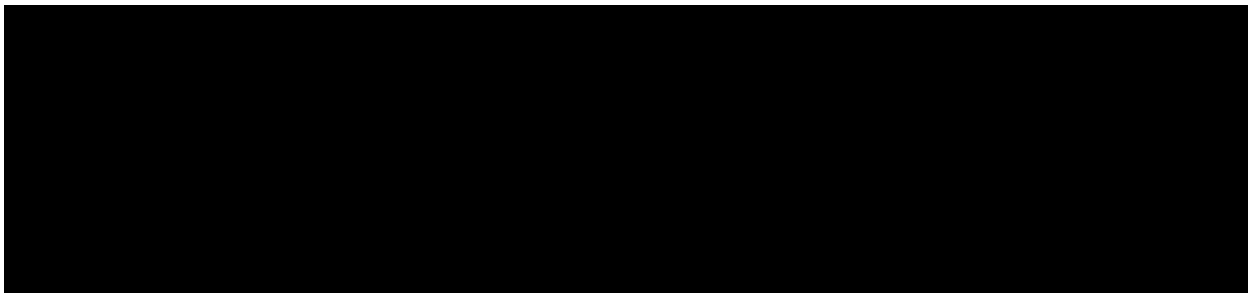


Furthermore, there is a genuine issue of fact as to whether the Sartomer letter that Acushnet now relies on is accurate.



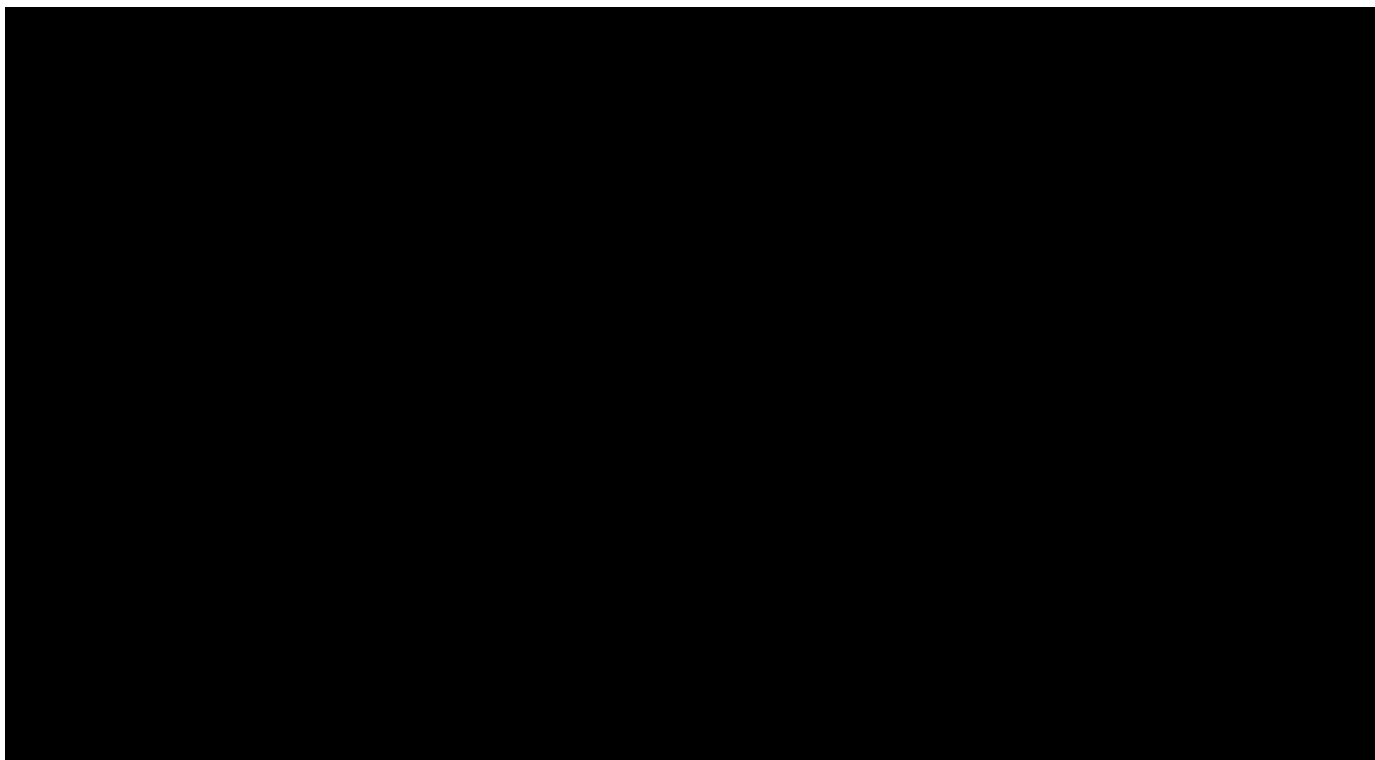
2. Zinc PCTP

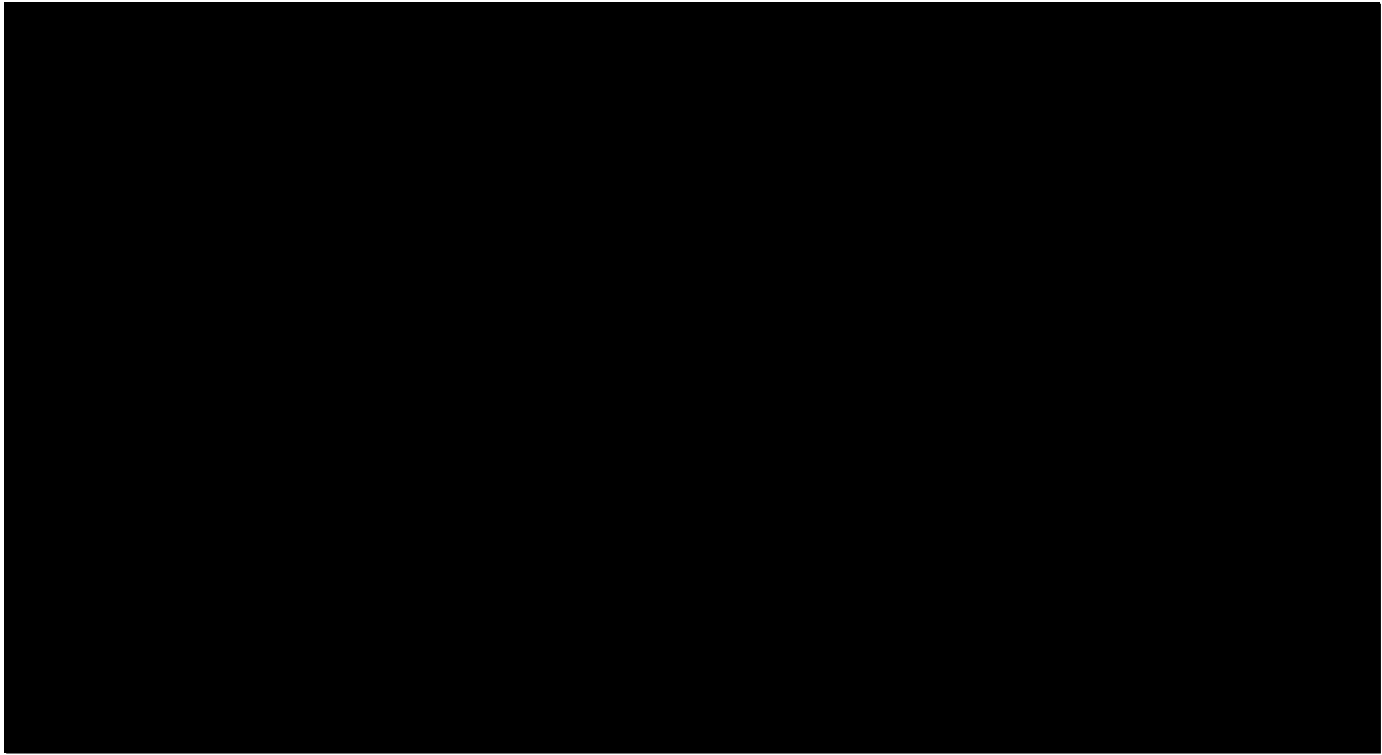




D. The Dispute

The key issue on this motion is whether the amounts of ZDA and zinc PCTP in the accused Acushnet golf balls fall within the claim ranges. The parties' use of different purity levels results in materially different calculations – particularly for amounts of ZDA – in each of the accused golf balls. Acushnet recalculates the amounts of zinc PCTP and ZDA in a table at pages 19-20 of its brief. These recalculated amounts are different than the amounts calculated by Bridgestone's expert (Ex. 2, Cadorniga's Decl., Report at Exhibits B, I), and different than what is shown by Acushnet's manufacturing guidelines. The differences in the amounts calculated by Acushnet versus the amounts calculated by Bridgestone are shown in the table below, in grey shading:

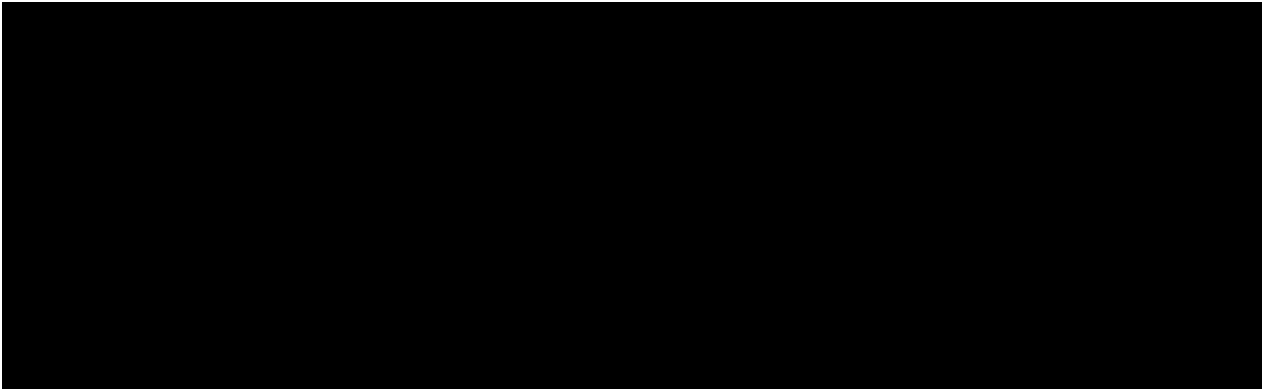




By its recalculations based on the purity levels, Acushnet seeks to move the accused balls from infringing to non-infringing under its claim construction. Thus, Acushnet's non-infringement argument is based on a factual dispute created by its recalculations. That is not a basis for summary judgment.

E. Dual Core Balls

Acushnet argues that two of the eight accused golf balls, and the "current version" of a third ball, are "dual core" balls (D.I. 373 at 20-21), and that Mr. Cadorniga "improper[ly] combined the inner and outer cores in reaching his conclusions" (*id.* at 21).



██████████ Acushnet cannot simply ignore Mr. Cadorniga's opinion – particularly when his rationale is supported by Acushnet's documents – to seek summary judgment.

ARGUMENT

I. LEGAL STANDARDS

A. Summary Judgment

Summary judgment is appropriate only if “the pleadings, depositions, answers to interrogatories, and admissions on file, together with the affidavits, if any, show that there is no genuine issue as to any material fact and that the moving party is entitled to judgment as a matter of law.” Fed. R. Civ. P. 56(c). “Facts that could alter the outcome are ‘material,’ and disputes are ‘genuine’ if evidence exists from which a rational person could conclude that the position of the person with the burden of proof on the disputed issue is correct.” *Horowitz v. Fed. Kemper Life Assurance Co.*, 57 F.3d 300, 302 n.1 (3d Cir. 1995) (internal citations omitted). If the moving party has demonstrated an absence of material fact, the nonmoving party then “must come forward with ‘specific facts showing that there is a genuine issue for trial.’” *Matsushita Elec. Indus. Co. v. Zenith Radio Corp.*, 475 U.S. 574, 587 (1986) (quoting Fed. R. Civ. P. 56(e)). The court will “view the underlying facts and all reasonable inferences therefrom in the light most favorable to the party opposing the motion.” *Pa. Coal Ass’n v. Babbitt*, 63 F.3d 231, 236 (3d Cir. 1995).

B. Literal Infringement

After the Court construes the claims, the trier of fact must compare the properly construed claims with the accused infringing product, *Markman*, 52 F.3d at 976, to determine whether each limitation of at least one claim of the patent is found exactly in

the alleged infringer's product, *Panduit Corp. v. Dennison Mfg. Co.*, 836 F.2d 1329, 1330 n.1 (Fed. Cir. 1987).

C. Infringement Under the Doctrine of Equivalents and Prosecution History Estoppel

Infringement under the doctrine of equivalents requires that the accused product have every limitation of a claim, either literally or by an equivalent. *Warner-Jenkinson Co. v. Hilton Davis Chem. Co.*, 520 U.S. 17, 41 (1997). An element is equivalent if the differences between the element and the claim limitation are "insubstantial." *Zelinski v. Brunswick Corp.*, 185 F.3d 1311, 1316 (Fed. Cir. 1999). One test used to determine "insubstantiality" is whether the element performs substantially the same function in substantially the same way to obtain substantially the same result as the claim limitation. *See Graver Tank & Mfg. Co. v. Linde Air Products Co.*, 339 U.S. 605, 608 (1950).

Prosecution history estoppel "ensures that the doctrine of equivalents remains tied to its underlying purpose. ... The doctrine of equivalents is premised on language's inability to capture the essence of innovation, but a prior application describing the precise element at issue undercuts that premise. In that instance the prosecution history has established that the inventor turned his attention to the subject matter in question, knew the words for both the broader and narrower claim, and affirmatively chose the latter." *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co., LTD.*, 535 U.S. 722, 734-35 (2002).

D. Rebuttal Criteria Under Festo

Under the Supreme Court's *Festo* decision, a narrowing amendment made during patent prosecution for reasons relating to patentability creates a presumption that

the patentee cannot capture equivalents to the narrowed limitation in a later infringement action. *Festo*, 535 U.S. at 740. That presumption can be rebutted, however, if the patentee can prove that the specific equivalent at issue in a particular case was not surrendered by the narrowing amendment. *Id.*

The patentee bears “the burden of showing that the amendment does not surrender the particular equivalent in question.” 535 U.S. at 740. Under *Festo*, there are three ways by which a patentee can rebut the presumption of prosecution history estoppel. The one at issue here is proof that “the rationale underlying the amendment [bears] no more than a tangential relation to the equivalent in question” *Id.* at 740-41. The focus of the tangential relation test is on the *reason* for the narrowing amendment. *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co., LTD.*, 344 F.3d 1359, 1369-70 (Fed. Cir. 2003) (*en banc*). The test “asks whether the reason for the narrowing amendment was peripheral, or not directly relevant, to the alleged equivalent.” *Id.* at 1369.

The inquiry “focuses on the patentee’s objectively apparent reason for the narrowing amendment,” a reason which “should be discernible from the prosecution history record.” *Festo*, 344 F.3d at 1369. The underlying purpose of the amendment can often be determined based on the prior art that the amendment was made to avoid. *See, e.g., Biagro Western Sales, Inc. v. Grow More, Inc.*, 423 F.3d 1296, 1306 (Fed. Cir. 2005); *Engineered Prod. Co. v. Donaldson Co., Inc.*, 313 F. Supp. 2d 951, 973 (N.D. Iowa 2004). The tangential relation prong of the *Festo* rebuttal analysis “is for the court to determine from the prosecution history record without the introduction of additional evidence.” *Festo*, 344 F.3d at 1370.

A patentee can rebut the presumption under the “tangential relation” prong by a preponderance of the evidence. *Cordis Corp. v. Medtronic Ave., Inc.*, 336 F. Supp. 2d 363, 367 (D. Del. 2004). The overall focus in determining whether the presumption has been rebutted is whether the narrowing amendment “surrender[ed] the particular equivalent in question.” *Festo*, 535 U.S. at 740.

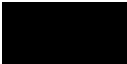
Where a patentee demonstrates that the rationale underlying an amendment bears no more than a tangential relation to the equivalent, “the amendment cannot reasonably be viewed as surrendering [that] particular equivalent.” *Festo*, 535 U.S. at 740. In such circumstances, the presumption is rebutted, and the full range of equivalents is available to the patentee.

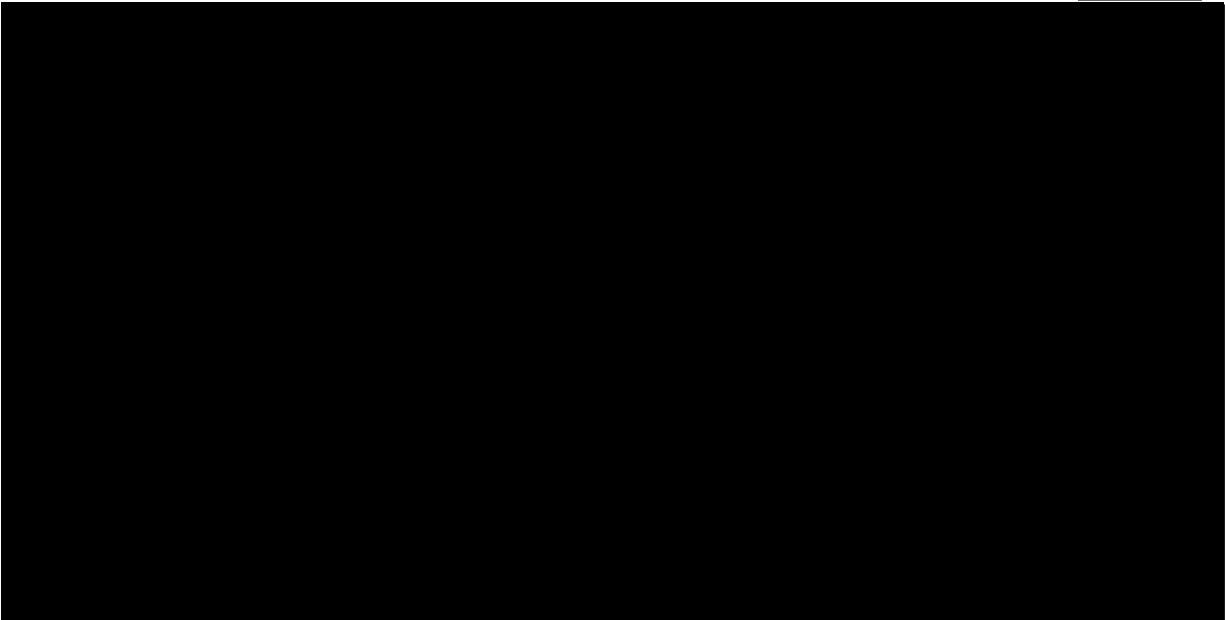
II. THE ACCUSED PRODUCTS LITERALLY INFRINGE THE ‘652 PATENT

Claim 1 of the ‘652 patent includes the key disputed claim limitations on this motion: “about 25 to about 40 parts by weight” of unsaturated carboxylic acid (such as ZDA) and “about 0.05 to about 2 parts by weight” of sulfur compound (such as zinc PCTP). As set forth in the claim construction briefing, Bridgestone’s position is that “about” in these two limitations should be given its plain and ordinary meaning, “approximately,” and should be defined broadly “in the stylistic and technological context in which it is used” (D.I. 229, Bridgestone Op. Markman Br.); *see also Cent. Admixture Pharm. Servs. v. Advanced Cardiac Solutions, P.C.*, 2007 U.S. App. LEXIS 7593, 23 (Fed. Cir. 2007) (“The use of the word ‘about[]’ avoids a strict numerical boundary to the specified parameter. Its range must be interpreted in its technological and stylistic context.”) (Ex. 7). Indeed, Acushnet agrees that “about” means “approximately” (D.I. 373 at 8).

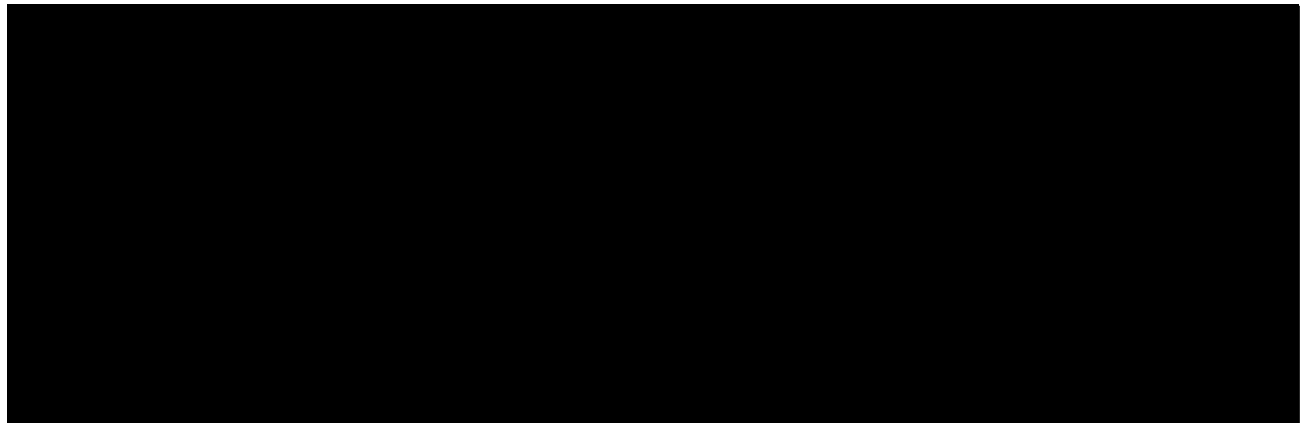
As set forth in Acushnet's brief, Bridgestone's expert, Mr. Cadorniga, has opined that the accused balls fall within the "about" ranges of the '652 patent. Acushnet's expert, Dr. Felker, has opined that they do not. Dr. Felker does so by recalculating the amounts of zinc PCTP and ZDA in the accused balls, based on Acushnet's position concerning the purity of these two components. The Court will look in vain in Acushnet's brief for any analysis of why the accused golf balls do not fall within the claims, other than a passing reference that Dr. Felker says so based on his recalculation (D.I. 373 at 18). Acushnet provides no explanation or argument, for example, why "about 25" does not include 24.89, 24.49, 23.46 or the other values calculated by Mr. Cadorniga. This is not an issue for summary judgment – it is a classic battle of experts for the jury.

A. Bridgestone's Evidence

Bridgestone's expert, Mr. Cadorniga, has opined that "about 2 parts" zinc PCTP is broad enough to capture the amounts of zinc PCTP used by Acushnet, 



B. Acushnet's Evidence



Moreover, Dr. Felker's reliance on the precision of various measurement devices misses the point. The inventors of the '652 patent never mentioned any measurement error based on only the measurement devices. In fact, before identifying the preferred ranges, the inventors stated that "[t]he unsaturated carboxylic acid metal salt may be blended in *any desired amount....*" (D.I. 374, '652 patent at Ex. 1, 2:48-49) (emphasis added). This reflects the inventors' intent to claim range amounts for the core materials that would provide "a golf ball having further improved flying performance."

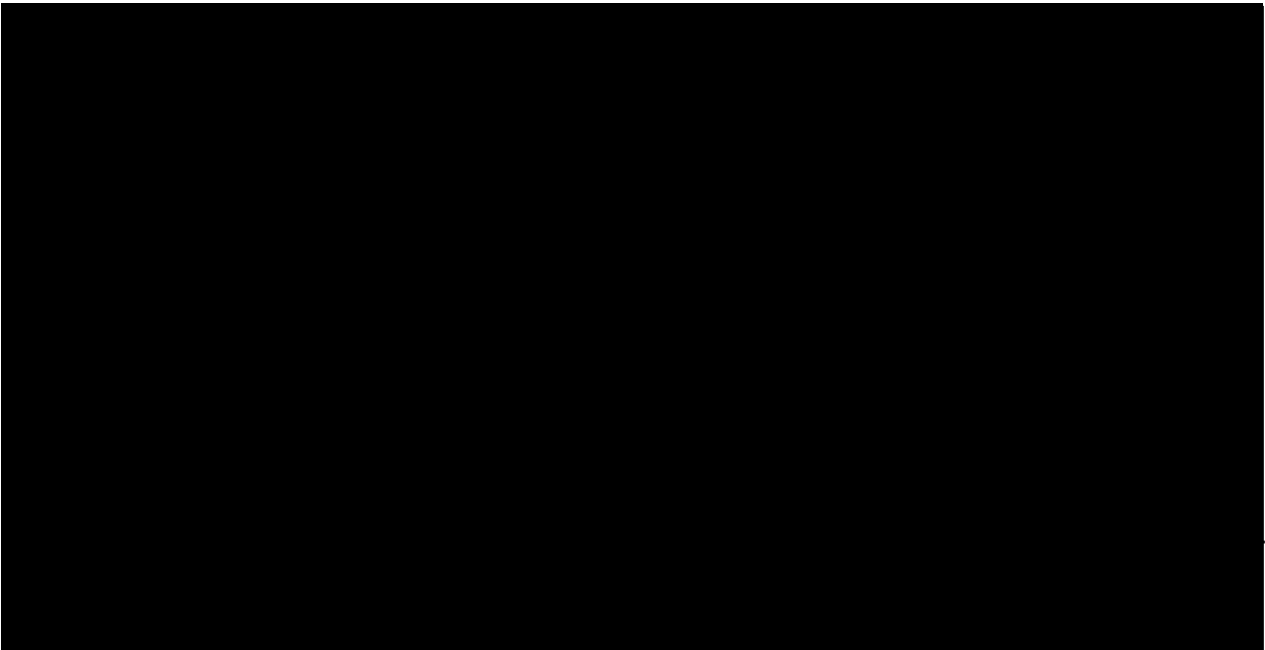
C. There Is A Factual Dispute As To Infringement

Using Mr. Cadorniga's calculations of the amounts of ZDA and zinc PCTP, the accused golf balls infringe the asserted claim. Acushnet disputes Mr. Cadorniga's calculations of the amounts of certain core materials such as ZDA and zinc PCTP from the Manufacturing Guidelines, and relies instead on its own recalculations and on its overly-narrow claim construction of the term "about." The differences in the amounts calculated by Bridgestone's and Acushnet's experts are genuine issues of material fact that must be determined at trial and not adjudicated under summary

judgment.²

D. Infringement Under Volumetric Analysis Of Dual-Core Golf Balls

Acushnet argues that its dual-core golf balls cannot infringe because they contain “two separate rubber compositions,” and neither of those rubbers individually contain the claimed amounts of an organosulfur compound or an unsaturated fatty acid (D.I. 373 at 20-21). Bridgestone’s expert’s infringement analysis of these accused golf ball demonstrates the genuine issues of material fact to preclude summary judgment.



² However, regardless of whether one uses Acushnet or Bridgestone’s calculations, at least the Pro V1 and Pro V1x golf balls literally satisfy the claim elements relating to ZDA and zinc PCTP amounts, based on a claim construction of “about” that includes mere rounding of the values. This Court has previously determined that “about,” when used in the context of a range, “should be given its ordinary meaning in a mathematical context, whereby decimals are rounded up or down to the nearest integer [or significant digit] according to numeric value.” *Novartis Pharms. Corp. v. Eon Labs Mfg., Inc.*, 215 F. Supp. 2d 452, 456-57 (D. Del. 2002). Applied here, for example, the range in claim 1 of “about 0.05 to about 2 parts by weight of a sulfur compound” would include within its literal scope 0.045 to 2.49 parts by weight of sulfur compound.

patent (Ex. 2, Cadorniga Decl., Report at p. B-36 to B-53).

Acushnet does not criticize the manner in which Bridgestone's expert performed a volumetric analysis of the core materials to calculate a parts per hundred analysis for individual materials in the combined core. The dispute is in the appropriateness of such volumetric analysis (or of the definition of "rubber composition"). Bridgestone contends that the volumetric analysis is a proper way to determine the amounts of core materials in what Acushnet admits is the "core." Thus, Bridgestone's analysis of the combined rubber composition making up the "core" is also proper, or it is at least an issue for the jury to decide.³

III. ALTERNATIVELY, THE ACCUSED PRODUCTS INFRINGE UNDER THE DOCTRINE OF EQUIVALENTS

A. The Prosecution History Of The '652 Patent

The application for the '652 patent was filed on May 10, 1990 and issued on October 12, 1993. It claims priority to a Japanese patent application filed on May 11, 1989.⁴

³ In a throw-away paragraph, Acushnet argues that "for substantial time periods, Acushnet used blends" of rubber, which it says are excluded from the properly construed claims (D.I. 373 at 22). As set forth in the claim construction briefing, that construction is wrong. Moreover, Acushnet can not get summary judgment by simply citing to some summary charts – that contain data that was not produced during fact discovery and which is the subject of Bridgestone's Motion for Sanctions – attached to a declaration submitted by one of its employees.

⁴ Acushnet's citation to November 5, 1989 is wrong. The '652 patent has a Foreign Application Priority Date which is correctly May 11, 1989 and not November 5, 1989, as evidenced in the prosecution history (D.I. 375, Ex. 16-1, Prosecution History: Application dated May 10, 1990 and Declaration and Power of Attorney signed April 6, 1990).

As originally filed, claims 1 and 2 read as follows (D.I. 375, Ex. 16-1,

Prosecution History):

1. A solid golf ball comprising a rubber composition containing a base rubber, an unsaturated carboxylic acid metal salt, and a sulfur compound selected from the group consisting of an organic sulfur compound and a metal-containing organic sulfur compound.
2. The golf ball of claim 1 wherein said rubber composition contains

100 parts by weight of the base rubber,

about 25 to about 40 parts by weight of the unsaturated carboxylic acid metal salt, and

about 0.05 to about 2 parts by weight of the sulfur compound.

Thus, original application claim 1 was directed to a solid golf ball with a base rubber, an unsaturated fatty acid, and an organic sulfur compound, and claim 2 was directed to the quantities of the core materials. The claimed ranges of “about 25 to about 40 parts by weight” of the unsaturated fatty acid and “about 0.05 to about 2 parts by weight” of the sulfur compound that are now at issue never changed throughout the prosecution of the application.

In response to a first Office Action rejecting claims 1 and 3-6 for obviousness over U.S. Patent No. 4,770,422 to Isaac, Bridgestone filed an amendment on April 12, 1991. It amended claim 1 to incorporate the subject matter of dependent claim 2, and added an organic peroxide ingredient as follows:

1. (Amended) A solid golf ball comprising a rubber composition containing 100 parts by weight of a base rubber selected from the group consisting of polybutadiene rubber, natural rubber, polyisoprene rubber and styrene-butadiene rubber, about 25 to about 40 parts by weight of an unsaturated carboxylic acid metal salt, [and] about 0.05

to about 2 parts by weight of a sulfur compound selected from the group consisting of an organic sulfur compound and a metal-containing organic sulfur compound, and about 0.5 to about 3 parts by weight of an organic peroxide. D.I. 375, Ex. 16-6, Amendment of April 12, 1991).

Bridgestone amended claim 1 to clarify its invention. Bridgestone traversed the obviousness rejection as follows, noting that there had been no rejection over the originally-claimed amounts:

Issac fails to disclose or suggest a sulfur compound selected from the group consisting of an organic sulfur compound and a metal-containing organic sulfur compound as recited in Applicant's now amended claim 1, and, therefore, fails to describe or suggest the present invention....⁵

Claim 1 as amended includes the quantities of the ingredients in the golf ball of Applicant's claim 1. Therefore, in light of the fact that a rejection was not sustained over claim 2 which recites such amounts, claim 1 which now recites the required amounts, along with dependent claims 3-20, are considered to be in condition for allowance. (*id.*, at 8-9).

In a second Office action dated July 8, 1991, the Examiner rejected the claims under 35 U.S.C. §103 as "being unpatentable over Isaac or Kakiuchi in view of Tominaga." The Examiner stated that "Isaac...or Kakiuchi...disclose a composition for golf balls comprised of polybutadiene, an unsaturated carboxylic acid metal salt and an organic peroxide. The composition of the primary references differ from the instant invention in that it lacks a sulfur compound" (D.I. 375, Ex. 16-7, second Office action of

⁵ The "about 25 to 40 parts" in claim 1 was the same amount claimed in Isaac (Ex. 8, U.S. Patent No. 4,770,422, Isaac's claim 1: "about 25-40 parts of zinc diacrylate"). Thus, Bridgestone clearly did not amend claim 1 to include a range for the ZDA material to overcome Isaac.

July 8, 1991, at 2). Thus, even the Examiner recognized that Issac did not disclose a sulfur compound. Bridgestone, therefore, clearly did not amend claim 1 to include a range amount of sulfur compound to distinguish Issac -- the range of sulfur compound had been in the claims since they were originally filed.

The Examiner also rejected claims 1 and 3-20 under 35 U.S.C. §102 as “being anticipated by Tominaga,” where Tominaga disclosed a polysulfide compound as a sulfur compound (*id.*, at 2-3).

In response, Bridgestone filed a second amendment on October 8, 1991. Claim 1 was amended to further specify the type of “sulfur compound,” but the amounts did not change:

Claim 1. (Twice Amended) A solid golf ball comprising a rubber composition containing 100 parts by weight of a base rubber selected from the group consisting of polybutadiene rubber, natural rubber, polyisoprene rubber and styrene-butadiene rubber, about 25 to about 40 parts by weight of an unsaturated carboxylic acid metal salt, about 0.05 to about 2 parts by weight of a sulfur compound selected from the group consisting of [an organic sulfur compound,] thiophenols and metal salts thereof, and thiocarboxylic acids and metal salts thereof, [and a metal-containing organic sulfur compound,] and about 0.5 to about 3 parts by weight of an organic peroxide. (D.I. 375, Ex. 16-18, Amendment of October 8, 1991).

In a third Office Action, dated December 11, 1991, the Examiner rejected claims 1, 3-12, 14-15 and 17-20 under 35 U.S.C. §103 as “being unpatentable over Tominaga or Isaac or Kakiuchi in view of Verbanc et al.” The Examiner stated that “Verbanc et al..., however, teach that the processability of elastomers (e.g., polybutadiene) is improved when a zinc salt of an aromatic mercaptan of the benzene and naphthalene series is incorporated into said elastomers” (D.I. 375, Ex. 16-9, third Office action of December 11, 1991, at 2-3).

Bridgestone traversed the obviousness rejection on several grounds, including that, as a secondary reference, Verbanc does not teach or suggest the particular group of sulfur compounds recited in Applicants' claim 1 and that the invention achieves unexpectedly superior results, in particular with respect to improved initial velocity, rebound property, deflection under load and hardness (D.I. 375, Ex. 16-12, Amendment of April 13, 1992, at 4-7).

In a fourth Office Action dated May 5, 1992, a third Examiner rejected the pending claims under 35 U.S.C. §103 as "being unpatentable over Tominaga, Issac [*sic*] or Kakiuchi in view of Kaplan et al." The Examiner cited Kaplan as teaching that the processability of elastomers, including polybutadienes, is improved when an iron-free peptizer such as pentachlorothiophenol is added (D.I. 375, Ex. 16-14, Office action of May 5, 1992, at 2-3).

Again, Bridgestone traversed the obviousness rejection on many grounds (*see id.*, Response of August 5, 1992, at 2-6), including, for example, unexpectedly superior results illustrated in the new Declaration and lack of motivation to combine the references (*id.*, at 4).

In a fifth Office Action dated October 13, 1992, the Examiner maintained the rejection under 35 U.S.C. §103 as "being unpatentable over Tominaga, Issac [*sic*] or Kakiuchi in view of Kaplan et al." The Examiner stated that "the ordinary practitioner in the rubber art would have found clear incentive to employ the pentachlorothiophenol peptizing agent of Kaplan et al. into a styrene-butadiene rubber composition for the purpose of breaking down the rubber prior to its compounding or vulcanization" (D.I. 375, Ex. 16-17, Office action of October 13, 1992, at 2-3).

In response, Bridgestone made the following amendment on March 12, 1993, but did not change any of the range amounts:

Claim 1. (Thrice Amended) A solid golf ball, having an improved rebound property and initial velocity, comprising a rubber composition containing 100 parts by weight of a base rubber selected from the group consisting of polybutadiene rubber, natural rubber, polyisoprene rubber and styrene-butadiene rubber, about 25 to about 40 parts by weight of a zinc or magnesium salt of an unsaturated [carboxylic] fatty acid having 3 to 8 carbon atoms [metal salt], about 0.05 to about 2 parts by weight of a sulfur compound selected from the group consisting of pentachlorothiophenol, 4-t-butyl-o-thiocresol, 4-t-butyl-p-thiocresol, 2-benzamidothiophenol, thiobenzoic acid, and zinc [thiophenols and metal] salts thereof, [and thiocarboxylic acids and metal salts thereof,] and about 0.5 to about 3 parts by weight of an organic peroxide (*id.*, Ex. 16-19, Amendment of March 12, 1993).

Bridgestone again traversed the obviousness rejection on many grounds (*see id.*, at 2-10), including, for example, the requirement for using specific sulfur compounds:

As explained in previous responses, one essential aspect of the golf ball of the present invention is the incorporation of a specific sulfur compound in order to satisfy one of the objectives of the present invention, namely, providing a golf ball having a further improved flying performance. When a sulfur compound selected from the group...as recited in Applicants' claim 1 as amended, is added to the rubber composition, the rubber composition can be vulcanized into a rubbery elastomer having improved rebound resilience and a solid golf ball made therefrom exhibits an increased initial velocity upon hitting and improved flying performance. (*id.*, at 4).

The Examiner then issued a Notice of Allowability on April 9, 1993. The Examiner gave the following reasons for allowance:

Nothing in the prior art would suggest that utilization of the sulfur-containing agents, such as the pentachlorothiophenol disclosed by Kaplan et al., in lieu of the sulfur-containing

molecular weight regulators of Tominaga et al. would result in rubber golf balls having improved velocity upon impact (D.I. 375, Ex. 16-21, Notice of Allowability of April 9, 1003, at 2).⁶

Thus, during the entire prosecution history, the claimed amounts of the sulfur compound (*e.g.*, zinc PCTP) and the unsaturated fatty acid (*e.g.*, ZDA) did not change, except for the incorporation of the subject matter of dependent claim 2 into claim 1. The Examiner never raised any issue with regard to the claimed amounts of those materials. The final claim amendment included the addition of zinc PCTP as a type of the organo-sulfur compound, and this is exactly what Acushnet uses.

B. The Amendments During Prosecution Were Not Related To The Amounts Of The Claimed Organosulfur Compounds And Fatty Acids

As set forth above, Acushnet's assertion that "[t]he claims did not originally require specific *amounts or types* of sulfur compounds nor did it originally require a specific amount of an unsaturated carboxylic acid," is wrong. The claimed ranges of unsaturated fatty acid (*i.e.*, ZDA) and sulfur (*i.e.*, zinc PCTP) were included in original application claim 2. These ranges never changed during prosecution.

Although Bridgestone argued to the examiner that "[a]n essential aspect of the present invention is the incorporation of a specific sulfur compound as recited in Applicant's amended claim 1," it never referred to the *amounts* of these compounds as being essential (D.I. 375, Ex. 16-1, Prosecution History Amendment of October 8, 1991,

⁶ On April 13, 1993, Bridgestone filed an Amendment under 37 C.F.R. §1.312 to some of the claims which were editorial in nature and made for clarification. Bridgestone also brought to the Examiner's attention that claims 2 and 12-17 had been previously canceled. On May 21, 1993, the Examiner issued a Supplemental Notice of Allowability for claims 1, 3-11 and 18-20.

at 5). Although the claims were amended to require the unsaturated fatty acid and the sulfur compound, the claimed ranges were not amended. Thus, these ranges were “tangential” to the reason for amendment. *Insituform Techs., Inc. v. Cat Contracting, Inc.*, 385 F.3d 1360 (Fed. Cir. 2004) (Prosecution history estoppel did *not* preclude infringement under the doctrine of equivalents because the reason for the amendment (to distinguish a reference that showed a single cup vacuum at the end of the pipe liner from the claimed invention (a single cup successively moved along the length of the pipe liner)) was “tangential” to the accused equivalent (multiple cups along the length of the pipe liner)).

Not only did the Examiner not mention the use and amount of ZDA, but his actions establish that he attached no particular significance to that feature of the inventions. Specifically, the amendment adding the range “about 25 to about 40 parts by weight” of an unsaturated carboxylic acid metal salt such as ZDA is the same range as recited in Isaac’s independent claim 1. Thus, the incorporation of this range limitation when it is the same limitation recited in Isaac would not be an attempt to overcome the reference. The fact that Isaac claimed the same range of “about 25 to 40 parts” makes it evident that use and amount of ZDA were not the focus of the prosecution or the key to patentability.

This history shows that the rationale for the amendment was completely unrelated to the Acushnet infringing equivalents. Instead, Bridgestone’s rationale was to clarify the invention in the independent claim to thereby obtain allowance.

C. *Insituform* Confirms That The Tangential Relation
Criteria Is Satisfied Here

In *Insituform Tech., Inc. v. Cat Contracting, Inc.*, 385 F.3d 1360, 1368 (Fed. Cir. 2004), the Federal Circuit held that the *Festo* presumption had been rebutted under the tangential relation prong. In *Insituform*, there was a narrowing amendment based on the addition of a limitation when a broader independent claim was canceled in favor of a narrower, originally dependent one. Claim 1 of *Insituform*'s patent for an underground pipe repair method had originally not specified the number of cups that could be used to create a vacuum, but during prosecution, the patentee replaced the broad, unlimited claim with a narrower claim that specified that a single cup would be used. *Id.* at 1366. The process that was found to infringe under the doctrine of equivalents used multiple cups to create the vacuum. *Id.* at 1365-66.

The Federal Circuit concluded that the reason the amendment had been made was to distinguish the invention from prior art that involved the placement of a compressor, not the number of cups used to create the vacuum, and that there was "no indication in the prosecution history of any relationship between the narrowing amendment and a multiple cup process, which is the alleged equivalent in this case." *Id.* at 1370. Accordingly, the *Festo* presumption was rebutted. *Id.* at 1370-71.

The prosecution history at issue in *Insituform* is similar to that of Bridgestone's patent prosecution. The original independent claims all lacked the element at issue in the later equivalents dispute – in the case of *Insituform*, cups; in the case of Bridgestone, range amounts of an organosulfur compound and an unsaturated fatty acid. During prosecution, the independent claims were rejected, and replaced by narrower, formerly-dependent claims that contained a version of the element at issue – in the case

of *Insituform*, a single-cup process; for Bridgestone, range amounts of an organosulfure compound and an unsaturated fatty acid.

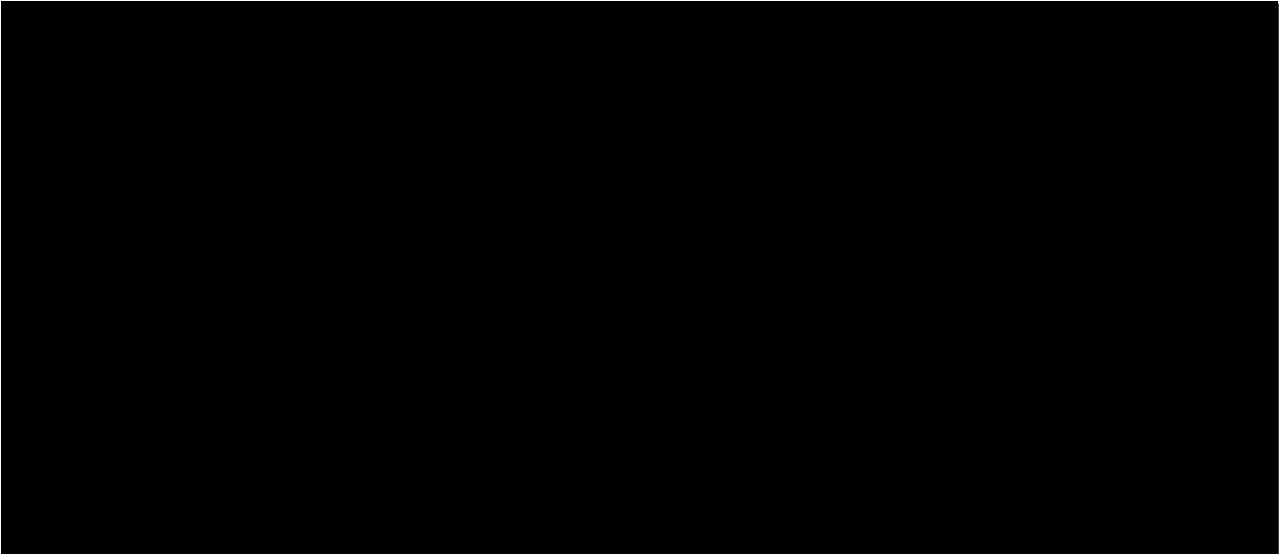
In both cases, the prior art being avoided did not include the element in the dependent claim that was added to the independent claim. Bridgestone was trying to avoid prior art that contained a core recipe with typical amounts of an unsaturated fatty acid, but no sulfur compound. The limitations that were added, however, concerned ranges for unsaturated fatty acids and organosulfur compounds.

Bridgestone, therefore, has successfully rebutted the presumption. There is no indication in the prosecution history here of any relationship between the narrowing amendments that included range amounts of unsaturated fatty acids and organosulfur compounds and the alleged equivalents, *i.e.*, use of zinc PCTP as high as 2.71 pph, or use of ZDA as low as around 17.03 pph.

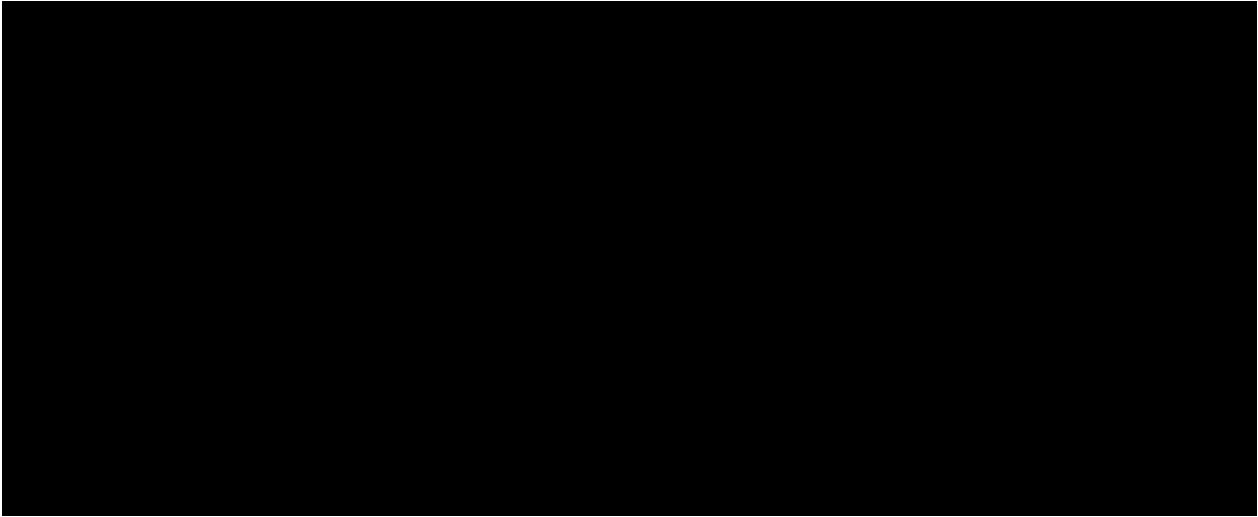
D. Base Rubber

Acushnet states that “Bridgestone offers no opinion on infringement under the doctrine of equivalents with respect to this limitation [regarding the ‘base rubber’ phrase]” (D.I. 373 at 3). That is wrong. Bridgestone’s expert provided several pages of explanation for the application of the doctrine of equivalents to the term “base rubber.”

Mr. Cadorniga has opined that even if the Court were to adopt Acushnet’s claim construction of “a base rubber selected from the group consisting of polybutadiene rubber, natural rubber, polyisoprene rubber, and styrene-butadiene rubber” to mean that one and only one base rubber may be selected from the listed rubbers, in his opinion, the accused Acushnet golf balls infringe under the doctrine of equivalents (Ex. 2, Cadorniga Decl., Ex. A at B-98 to B-101).



Further, the claim is open-ended, reciting “[a] solid golf ball, having an improved rebound property and initial velocity, comprising a rubber composition containing 100 parts by weight of a base rubber...” Although the claim requires that the rubber composition include a base rubber, the use of the transitional phrase “comprising” does not preclude rubbers other than the base rubber.



IV. BRIDGESTONE'S INTERROGATORY RESPONSES
WERE SUFFICIENT AND PROPER

Acushnet asserts that Bridgestone should be "precluded from asserting infringement under the doctrine of equivalents" because it "failed to identify the factual bases in support of any such argument in response to Acushnet's contention interrogatories" (D.I. 373 at 33). That is incorrect. This issue has been fully briefed by the parties in connection with Acushnet's Motion to Preclude (D.I. 294, 295, 321 329), and will be resolved by the Special Master.

CONCLUSION

Bridgestone requests that the Court deny Acushnet's motion for summary judgment of non-infringement of the '652 patent.

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CERTIFICATE OF SERVICE

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